

**TRANSLATION****PATENT COOPERATION TREATY****PCT****INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>03SGL0444WOP</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/014642</b>	International filing date ( <i>day/month/year</i> ) <b>22.12.2004</b>	Priority date ( <i>day/month/year</i> ) <b>22.12.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>F21V8/00, F21V5/04, F21W131/406, F21V14/06, G02B3/08, F21S8/10, F21V14/02</b>		
Applicant <b>SCHOTT AG</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>8</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>9</u> sheets, as follows: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) <div style="margin-left: 20px;">_____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</div>
4. This report contains indications relating to the following items: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application</div>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/014642

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-35 as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-66 received by this Authority on 21.10.2005 with telefax
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1/10-10/10 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/014642

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>2-66</u>	YES
		Claims <u>1</u>	NO
	Inventive step (IS)	Claims <u>50-66</u>	YES
		Claims <u>1-49</u>	NO
	Industrial applicability (IA)	Claims <u>1-66</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
1.	Reference is made to the following documents:		
	<b>D2: US2002/0024822</b>		
	<b>D3: US2003/0063466</b>		
2.1	It is pointed out that the following feature of claim 1 is regarded as entirely optional: <b><i>"in particular for a headlight with a Fresnel lens"</i></b> .		
2.2	Claim 1 further includes the following feature:		
	<p><b>and in which, with the change in shape of the light incident upon the optical assembly and/or with the change in size of the light illuminating the optical assembly, the aperture angle of the light exiting the optical assembly can be adjusted between two limit values, one lower value <math>\alpha_{sp}</math> and one higher value <math>\alpha_{F1}</math>.</b></p> <p>In all optical assemblies, the shape of the light incident upon the optical assembly can be changed in such a way that a corresponding change in the aperture angle of the light <i>exiting</i> the optical</p>		

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>assembly results, and thus "the aperture angle of the light exiting the optical assembly can be adjusted between two limit values, one lower value <math>\alpha_{sp}</math> and one higher value <math>\alpha_{F1}</math>". Consequently, it can be assumed that all optical assemblies include the above-mentioned feature, and hence this feature does not constitute a specific restriction.</p> <p>2.3 For the purposes of assessment of novelty and inventive step, the features mentioned in paragraphs 2.2 and 2.3 are therefore not taken into consideration.</p> <p>2.4 Consequently, the present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 is not novel (PCT Article 33(2)). Document D2 discloses (cf. paragraphs [0033]-[0035], and figures 3A-3C) an optical assembly for technical lighting purposes and including a Fresnel lens with a scattering disk (cf. paragraphs [0033]-[0035]), in which the scattering disk is arranged in a first zone and the Fresnel lens in a second zone, and the first and second zones occupy concentric surfaces with different diameters (cf. 3A-3C). The subject matter of claim 1 is therefore not novel.</p> <p>3. Dependent claims 2-49 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT novelty and inventive step requirements in light of</p>

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>document D2.</p> <p>4.1 The subject matter of claim 50 does not meet the requirements of PCT Article 6 because the contents of the application (cf. figures 10, 11, 13 and 14, and the corresponding text) indicate that the following features are necessary for the definition of a headlight according to the invention:</p> <ul style="list-style-type: none"><li>(a) the reflector (31) includes a focal point away from the reflector;</li><li>(b) the Fresnel lens has either a real focal point (claim 52) or a virtual focal point (claim 55);</li><li>(c) in a spot position, the distance (a) between the Fresnel lens (33) and the front edge of the reflector (31) is such that the real or virtual focal point is superimposed on the reflector focal point away from the reflector;</li><li>(d) in a flood position, the distance (a) between the Fresnel lens (33) and the front edge of the reflector (31) is such that a high light proportion hits only a very small zone at the centre of the scattering disk (37) (pages 27, 40-42; figures 11, 14);</li><li>(e) the Fresnel lens headlight should be a Fresnel lens headlight with "an optical assembly as per one of the claims 1-49" (and not "<i>in particular</i> a Fresnel lens with a scattering disk as per one of the claims 1-</li></ul>

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>49") .</p> <p>Since claim 1 is not admissible for lack of novelty, claim 50 must be regarded as a new independent claim. Consequently, claim 50, which does not contain the above-mentioned features, does not meet the requirement of PCT Article 6 in conjunction with PCT Rule 6.3(b), according to which each independent claim must contain all the technical features that are necessary for the definition of the invention. (In addition, it is pointed out that claim 50 in its present form is not novel over D3).</p> <p>4.2 For the purposes of assessment of novelty and inventive step, claim 50 was interpreted as if it included features (a)-(e) mentioned in paragraph 4.1. This interpretation makes it possible to overcome the objection under PCT Article 6.</p> <p>5.1 Claim 50, <i>interpreted in this sense</i>, appears to meet the requirements of PCT Article 33(2) and 33(3) for the following reasons:</p> <p>Document D3 is regarded as the prior art closest to claim 50 (cf. figures 1, 2 and corresponding text). The assemblies in document D3 may have one or two surfaces of the Fresnel lens textured so as to scatter light (i.e. like a scattering disk). Consequently, the subject matter of claim 50, interpreted in the above-mentioned sense, differs from document D3 by the following features:</p>

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<ul style="list-style-type: none"><li>• the scattering disk is arranged in a first zone (of the optical assembly) and the Fresnel lens is arranged in a second zone (of the optical assembly), and the first and second zones occupy concentric surfaces having different diameters;</li><li>• in a flood position, the distance (a) between the Fresnel lens (33) and the front edge of the reflector (31) is such that a high light proportion hits only a very small zone at the centre of the scattering disk (37) (pages 27, 40-42; figures 11, 14).</li></ul> <p>In comparison with D3, the present invention can be considered to address the problem of improving light distribution in the flood position.</p> <p>5.2 This combination of features was not found in the available prior art. Even if it were possible to arrange the Fresnel lens headlight of D3 in such a way that in a flood position a very high light proportion hits only a very small zone of the optical assembly, this small zone must not necessarily contain part of the scattering disk. A person skilled in the art would find no indication or suggestion in the prior art which could lead him to implement these features. Consequently, the solution proposed in claim 50 of the present application (interpreted in the above-mentioned sense) can be considered inventive (PCT Article 33(3)).</p>

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/014642

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
6.1	Independent claim 65 describes a use of a headlight with a Fresnel lens as per claim 1, and therefore involves an inventive step, for the reasons indicated in paragraphs 5.1 and 5.2, <i>mutatis mutandis</i> .
6.2	Claims 51-64 and 66 are dependent on claim 50 and thus also meet the PCT novelty and inventive step requirements.